



A new species of *Beltrania* from Western Ghats, India

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ABSTRACT

An attempt has been made to study leaf litter fungi of Gangoba sacred grove from Kolhapur district. A new species of *Beltrania* is described as *B. hasaneana* Bandgar and Patil Sp. Nov. collected on *Mangifera indica* L. (Anacardiaceae) collected from this sacred grove. The detail morpho-taxonomical description, photographs and illustrations are provided here.

Key words: *Beltrania*, Kolhapur, leaf litter fungi, Sacred Grove, Western Ghats.

INTRODUCTION

Kolhapur district lies in South Western Ghats of Maharashtra, which contain 37 sacred groves (Anonymous 1983-86). Out of them, Gangoba sacred grove is selected for the exploration of leaf litter fungi, which is situated at Hasane village from Radhanagari tehsil. It spreads on near about 8 ha. and covered by moist deciduous forests. It lies between 16° 20' 45.75" N and 73° 51' 19.55" E and 600 meters above msl. The sacred grove shows unique climatic conditions having low temperature near about 28°C and humidity 90 %; which favors the rich floristic diversity and hence, it is the huge reservoir of fungal diversity.

Leaf litter fungi from class Hyphomycetes has been reported from India by various researchers (Patil 1968, Pirozynski & Patil 1970, Pirozynski 1963, Bhat & Kendrik 1993, Vittal & Dorai 1994-95, Pande & Rao 1998, Bhat 2008, 2010). During the exploration of leaf litter fungi, one undescribed species of *Beltrania* collected on the leaves of *Mangifera indica* L. (Anacardiaceae). The genus *Beltrania* was discovered by Penzing (1882), on the leaves of *Citrus limonum* with its type species *Beltrania rhombica* Penzing (Patil 1968). Till date, 14 taxa and 226 records of *Beltrania* are reported on various host plants (Farr and Rossman, 2019) and 19 species are reported worldwide (www.indexfungorum.org).

This undescribed species of *Beltrania* *B. hasaneana* differs morphologically from other species and therefore, this is described as new to science.

MATERIALS AND METHODS

The specimens were collected in sterilized polythene bags from the field, preserved in sterilized container with proper indexing. Host plants were identified by using standard literature (Singh & Karthikeyan 2000, Singh et al. 2001, Pascal 1987). The leaf litter fungi were observed by preparing semi-permanent slides using lacto phenol as mounting medium and cotton blue as stain. Identification and confirmation of fungus was done by using standard literature (Barnett & Hunter 1972; Patil, 1968; Pirozynski and Patil, 1970) and their distributional records were checked by using literature (Bilgrami et al., 1991; Jamaluddin et al., 2004). Morpho-taxonomical characters were observed by using compound light microscope and photomicrography was made with the help of Leica 2000 Fluorescence microscope with digital camera. Illustration was done by using camera Lucida. Holotype specimen was deposited in mycological Herbarium, Agharkar Research Institute (ARI) Pune.

RESULT

Taxonomic Descriptions

Beltrania hasaneana Bandgar and Patil *sp. nov.*

MycoBank MB 830015

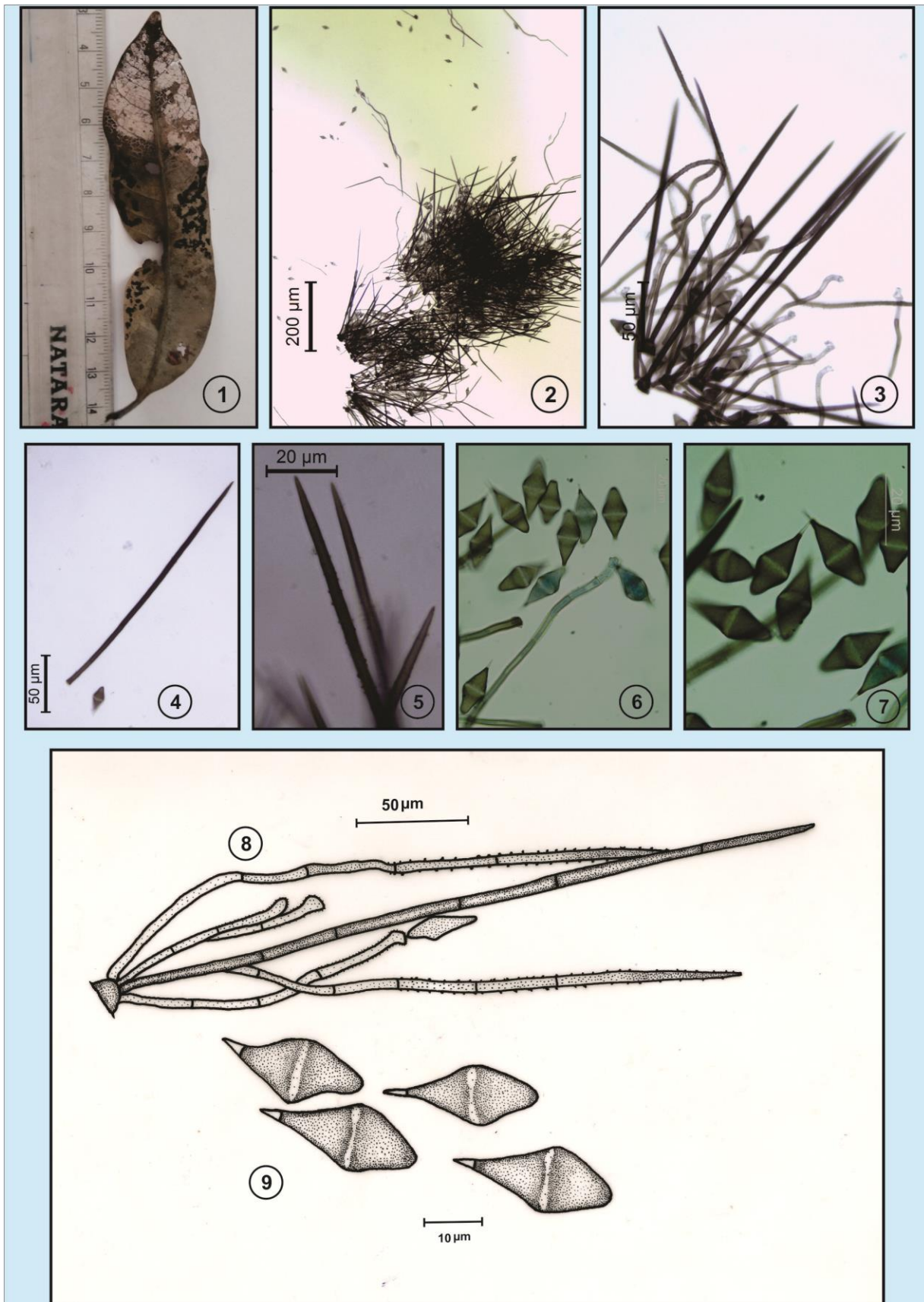
Etymology- The specific epithet is based on the name of type locality (Hasane).

Colonies amphigenous, dark brown to black, effuse; two types of setae- primary setae normal straight, erect, smooth, septate, thin walled, dark brown to black, $162 - 314 \times 6 \mu\text{m}$ thick at the base, tapering at the apex, arising from radial lobed basal cells; secondary setae smooth at the base, verrucose at the apex, somewhat spiral, $259 - 296 \times 4 \mu\text{m}$ thick at the base, tapering at apex, light brown at the base and brown at apex, arising from radial lobed basal cells; conidiophores simple, smooth, straight or somewhat curved, septate, $85 - 166 \times 4 \mu\text{m}$, light brown, arising from basal cell; separating cells $11 - 32 \times 4 \mu\text{m}$ thick; conidia biconic with central subhyaline band, brown, $21 - 27 \times 9 - 11 \mu\text{m}$, borne on denticles of separating cells, proximal end smooth and distal end with a hyaline spine, spine up to $3-6 \mu\text{m}$ long.

Material Examined- India, Maharashtra, Kolhapur, Hasane, Gangoba Sacred Grove, on leaf litter of *Mangifera indica* L. (Anacardiaceae), 20 November 2018, Bandgar S.G., AMH 10116, (holotype).

Table 1 : Comparative account of *Beltrania rhombica* Penzig and *Beltrania hasaneana* Bandgar and Patil *sp. nov.*

Sr. No.	Morph-taxonomic Characters	<i>Beltrania rhombica</i> Penzig	<i>Beltrania hasaneana</i> Bandgar and Patil <i>sp. nov.</i>
1	Colonies	Amphigenous, brown to black, velutinous, Mycelium subhyaline to brown	Amphigenous, brown to black, velutinous
2	Primary setae	Normal, straight, erect, smooth, septate, thin walled, dark brown to black $100 - 200$ or sometimes reaching $300 - 320 \times 4 - 7 \mu\text{m}$.	Normal, straight, erect, smooth, septate, thin walled, dark brown to black $162 - 314 \times 6 \mu\text{m}$.
3	Secondary setae	Absent	secondary setae present smooth at the base, verrucose at the apex, somewhat spiral, $259 - 296 \times 4 \mu\text{m}$.
4	Conidiophores	simple, smooth, straight, septate $25 - 12 \times 4 - 6 \mu\text{m}$	simple, smooth, straight or somewhat curved, septate $85 - 167 \times 4 \mu\text{m}$
5	Separating cells	up to $10 - 15 \times 4 - 6 \mu\text{m}$	up to $11 - 32 \times 4 \mu\text{m}$.
6	Conidia	Proximal end 1- denticulate or rarely rounded and distal end with hyaline spine up to $15 - 30 \times 7 - 14 \mu\text{m}$.	proximal end smooth, distal end with a hyaline spine, up to $21 - 27 \times 9.4 - 11 \mu\text{m}$.
7	Spines	up to $3 - 12 \times 2 \mu\text{m}$.	up $3 - 6 \mu\text{m}$.



Figs 1-9 *Beltrania hasaneana* sp. nov. 1 Infected leaf. 2 part of Colony. 3,8 Primary and Secondary setae arising from Basal cell. 4 Primary setae. 5 verrucose secondary setae. 6 Conidiophore with conidia. 7,9 Conidia.

Notes- The present species differ from earlier species in having secondary spiral, verrucose setae, this special character has not been reported in any other species of *Beltrania* and it also differs in other characters like proximal end of conidia usually smooth. The measurements of conidiophores, separating cells, conidia and spines are different from earlier species of *Beltrania* hence on the basis of these characters. The present collection of *Beltrania* treated as species new to science and named as *Beltrania hasaneana* sp. nov. is described as new species (Table 1).

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